WHAT IS CLAIMED IS:

1. An apparatus comprising:

walls enclosing a process chamber;

a wafer susceptor positioned within the chamber;

a first exhaust conduit in fluid communication with the chamber; and

a processing gas source in fluid communication with the chamber through a gas distribution showerhead, the gas distribution showerhead comprising;

a first channel in fluid communication with the processing gas source and with apertures distributed over a lower surface of the showerhead; and

a second channel separate from the first channel and in fluid communication with a second exhaust conduit and with exhaust apertures distributed over the lower surface of the showerhead.

2. The apparatus of claim 1 wherein the apertures define a first area and the exhaust apertures define a second area.

3. The apparatus of claim 2 wherein a ratio of the first area to the second area is substantially constant as a function of radial distance from the center of the gas distribution showerhead.

4. The apparatus of claim 2 wherein a ratio of the first area to the second area varies as a function of radial distance from the center of the gas distribution showerhead.

5. The apparatus of claim 4 wherein the ratio of the first area to the second area varies linearly as a function of radial distance from the center of the gas distribution showerhead.

6. The apparatus of claim 4 wherein the ratio of the first area to the second area varies nonlinearly as a function of radial distance from the center of the gas distribution showerhead.

7. The apparatus of claim 4 wherein the ratio of the first area to the second area increases as a function of radial distance from the center of the gas distribution showerhead.

8. The apparatus of claim 4 wherein the ratio of the first area to the second area decreases as a function of radial distance from the center of the gas distribution showerhead.

9. The apparatus of claim 1 wherein the first exhaust conduit and the second exhaust conduit are in fluid communication with a common foreline.

10. The apparatus of claim 9 wherein the plurality of second channels are in fluid communication with the foreline through a first valve and the second exhaust conduit is in fluid communication with the foreline through a second valve.

11. The apparatus of claim 1 wherein the first exhaust conduit and the second exhaust conduit are in communication with a common vacuum pump.

12. The apparatus of claim 1 wherein the first exhaust conduit and the second exhaust conduit are in communication with separate vacuum pumps.

13. A method of processing a semiconductor workpiece, the method comprising:

flowing a process gas to a semiconductor workpiece through a first plurality of orifices positioned in a gas distribution faceplate; and

removing gas from over the semiconductor workpiece through a chamber exhaust port and a second plurality of orifices positioned in the gas distribution faceplate.

14. The method of claim 13 further comprising removing the gas through only the chamber exhaust port prior to flowing the process gas.

15. The method of claim 13 further comprising removing the gas through the chamber exhaust port and the second plurality of orifices prior to flowing the process gas.

16. The method of claim 13 further comprising initially removing gas through only the chamber exhaust port.

17. The method of claim 13 further comprising initially removing gas through only the second plurality of orifices.

18. The method of claim 13 wherein the processing chamber is evacuated to a pressure below 20 Torr.

19. The method of claim 18 further comprising generating a plasma in the processing chamber prior to flowing the process gas.

20. The method of claim 13 further comprising adjusting a rate of removal of gas through the chamber exhaust port during processing.

21. The method of claim 13 further comprising adjusting a rate of removal of gas through the second plurality of orifices is adjusted during processing.

22. A method of processing a semiconductor wafer in a chamber comprising:

inserting a semiconductor wafer into the chamber;

evacuating the chamber through a first exhaust port;

introducing at least one process gas through a first set of orifices located on a surface of a showerhead;

removing gas through the first exhaust port; and

removing gas through a plurality of orifices positioned on the surface of the showerhead.

23. The method of claim 22 wherein a larger volume of gas is removed through the first exhaust port than is removed through the plurality of orifices.

24. The method of claim 22 wherein the chamber is evacuated to a pressure below 20 Torr.

25. The method of claim 24 wherein a plasma is generated in the chamber prior to the step of introducing the at least one process gas.

26. The method of claim 22 wherein removal of the gas through the first exhaust port and through the plurality of orifices occurs substantially simultaneously.

27. A method of controlling uniformity of a property of a film deposited on a semiconductor wafer, the method comprising:

positioning a wafer in a processing chamber;

introducing gases to the wafer through a first plurality of orifices positioned on a faceplate;

removing the gases through a second plurality of orifices positioned on the faceplate; and

simultaneously removing the gases across a radial exhaust path.

28. The method of claim 27 further comprising evacuating the chamber across the radial exhaust path only, prior to flowing the gases.

29. The method of claim 27 further comprising evacuating the chamber across the radial exhaust path and the second plurality of orifices prior to flowing the gases.

30. The method of claim 27 further comprising initially removing the gases through only the radial exhaust path.

31. The method of claim 27 further comprising initially removing the gases through only the second plurality of orifices.

32. The method of claim 27 wherein the chamber is evacuated to a pressure below about 20 Torr.

33. The method of claim 32 further comprising generating a plasma in the chamber.

34. The method of claim 27 wherein a rate of removing gas across the radial exhaust path is adjusted during processing.

35. The method of claim 27 wherein a rate of removing gas through the second plurality of orifices is adjusted during processing.